Appendix F • Landscape Character

Landscape character analysis is mostly concerned with long-term, indirect effects of landscape management activities. The landscape character issue relevant to the Kachina area analysis is the extent to which changes in forest composition, such as those proposed in the EIS, will affect the inherent aesthetic qualities of the area landscape.

The landscape of the Kachina Project area lies completely within the "Flagstaff Character Type" zone, a contiguous geographic area with common visual characteristics resulting from common ecological characteristics. Scenic characteristics identified for the Flagstaff Character Type in general and which occur within the Kachina Project area are outlined in *Landscape Character Types of the National Forests in Arizona and New Mexico (USDA Forest Service Southwestern Region, supplement to FSH 462.1989-676-727).*

The Kachina Project area occupies a small portion of the south edge of the San Francisco plateau, which is part of the Colorado plateau dominated by the San Francisco Mountain. Steep canyons in the south portion dissect the gentle terrain. These canyons become shallow in the northern areas. The canyons are often rimmed with columnar basalt cliffs that are atop sandstone cliffs in the deepest canyon sections. The seasonally flowing streams in the canyon bottoms create cascades and pools during their flow seasons, with remnant pools persisting well into the drier seasons. In places, the bedrock has been sculpted by water leaving interesting and unique rock forms in the stream channel.

The canyon vegetation generally contrasts with vegetation on top of the plateau, reflecting the contrast between canyon and plateau microclimates. Within the canyon walls, the vegetation is often highly varied and distinct, with deciduous trees such as aspen, oak, alder, and maple interspersed with conifers such as Douglas-fir and pinyon pine that create diverse vegetation patterns that change seasonally.

The ponderosa pine forest on the plateau above the canyons contains small remnants of the historic forest condition described in early accounts of the area. Historic accounts and photos describe a relatively open landscape dominated by large "yellow barked" ponderosa pine trees in huge grassy "parks" and also patches of pine and oak in a grassland matrix. A profusion of grasses and herbaceous vegetation covered most of the ground and very little brushy vegetation existed. Small grassy or boulder-strewn openings were interspersed throughout the more heavily forested areas.

Ecologists believe that the extensive pine forest of the Colorado plateau has only existed since the time of the last ice age, approximately 10,000 years ago. Before 10,000 years ago it is believed that spruce trees dominated the forest of the plateau. It is likely that the landscape character of the area changed little prior to European settlement. European settlement brought with it landscape management practices, such as intensive grazing, logging, and fire suppression, that have resulted in the present forest scenic condition.

Most forest stands throughout the Colorado plateau changed dramatically in appearance over a period that started around 1880 and continues today. The open pine parks, dominated by large, yellow-barked ponderosa pine, have given way in most places to more dense stands of smaller, black barked ponderosa pine trees such as those predominant in the Kachina analysis area. The present Colorado plateau forest stand typically has many more trees and more forest litter, such as pine needles, limbs, pine cones, and logs, and much less grass and herbaceous ground cover; and appears much more dense and shaded, than the pre-European forest.

The rapid change in landscape character over the past century contrasts snapshots of two very different characteristic landscapes, one that evolved for thousands of years and one that has come into dominance within the past century and a half. The contrast in the appearance between the two represents a range of variability in both ecological processes and in the resultant scenic values. Recent years have shown the visible result of larger and more numerous forest fires on forest landscapes, compelling us to consider large burned over areas as also within the "natural" range of variability for forest landscapes.

The denser tree cover that presently exists limits visibility, while the forest floor is often covered in several inches of forest litter that tends to exclude herbaceous vegetation and grasses. The profusion of small pine trees limits the viability and life span of the remaining large trees, both pine and oak, as described elsewhere in this EIS. The crowding reduces the growth rate of trees throughout entire stands so that the rate at which trees become larger and more valuable scenic elements slows at the

same time that crowding reduces the number of remnant large trees. The prevalence of small trees obscures the presence and dominance of the large trees, diminishing their large scale and muting the intensity of their bark and foliage color. The resulting scenic character is more limited in scope, often confined to only a few contiguous acres or less, with relatively little variety of plant life visible on the forest floor. The result is that the scenic value of the Kachina area landscape is diminishing as the dominance of smaller trees progresses and the vegetative pattern becomes visibly less diverse.

Research suggests that most people prefer the appearance of a more open forest with less forest litter and more ground cover plants visible. Most people also prefer the presence of larger trees in general and of large "yellow bark" ponderosa pine in particular.

Scenic integrity is a measure of the degree to which a landscape is visually perceived to be "complete." Scenic integrity analysis is used primarily to address the direct effects of activities on the landscape. Activities affecting scenic integrity for the Kachina Project include visible evidence of proposed thinning activities such as slash, skid trails, and stumps, as well as evidence of recreational activities such as fire rings, off road trails, site compaction, and litter.